

Abstract

Customized implants for use in reconstructive bone surgeries where anatomical accuracy and bone adaptation are important, such as plastic and craniomaxillofacial reconstructions. This implant comprises a porous surface layer and a tough inner core of interpenetrating phase
5 composite. The porous surface layer enhances the biocompatibility, tissue ingrowth, and implant stability. The tough inner core improves the mechanical properties of the implant with a high fracture toughness and a low modulus. The anatomical accuracy of the implants will minimize the intra-operative manipulation required to maintain a stable host bone-implant interface.